

## **AMENDMENTS TO THE CLAIMS**

This listing of claims will replace all prior versions, and listings, of claims in the application:

### **Listing of Claims:**

- 1           1. (Previously presented) A method for selectively auditing accesses to a  
2 relational database, comprising:  
3           receiving a query for the relational database;  
4           selectively auditing an access to the relational database,  
5                       wherein selectively auditing the access involves  
6           automatically modifying the query prior to processing the query, so  
7           that processing the query causes an audit record to be created and  
8           recorded only for rows in relational tables that are accessed by the  
9           query and that satisfy an auditing condition,  
10                       wherein satisfying the auditing condition allows selective  
11           auditing of the query and not for other rows,  
12                       wherein the auditing condition specifies a condition based on  
13           a value of a field in a row in the relational database, and  
14                       wherein satisfying the auditing condition allows selective  
15           auditing of the query,  
16                       wherein if the query includes a select statement, inserting a  
17           case statement into the select statement that calls a function that  
18           causes the audit record to be created and recorded if the auditing  
19           condition is satisfied,  
20                       wherein inserting the case statement into the query further  
21           comprises:

22 inserting the case statement into the query,  
23 allowing a query processor to allocate buffer for the  
24 query,  
25 removing the case statement from the query,  
26 allowing the query processor to generate a query plan  
27 for the query, and  
28 scheduling the case statement near the end of the  
29 query plan to ensure that the case statement is evaluated only  
30 after other conditions of the query are satisfied, so that the  
31 auditing record is created only for rows that are actually  
32 accessed by the query;  
33 processing the modified query to produce a query result, wherein processing  
34 the modified query includes,  
35 creating the auditing records for rows in relational tables that  
36 are accessed by the query and that satisfy the auditing condition, and  
37 recording the audit record in an audit record store; and  
38 returning the query result.

1 2 (Canceled).

1 3. (Previously presented) The method of claim 1, further comprising  
2 ensuring that the case statement is evaluated near the end of the query processing so  
3 that the case statement is evaluated only after other conditions of the query are  
4 satisfied.

1 4 (Canceled).

1 5. (Original) The method of claim 1, wherein if the query modifies at least  
2 one entry in the relational database, using a relational database system trigger to  
3 create and record the audit record for the modification to the relational database.

1           6 (Canceled).

1           7. (Original) The method of claim 1, wherein the audit record includes:  
2           a user name for a user making the query;  
3           a time stamp specifying a time of the query; and  
4           a text of the query.

1           8. (Original) The method of claim 1, wherein the auditing condition  
2           includes a condition for a field within the relational database.

1           9. (Previously presented) A computer-readable storage medium storing  
2           instructions that when executed by a computer cause the computer to perform a  
3           method for selectively auditing accesses to a relational database, the method  
4           comprising:  
5           receiving a query for the relational database;  
6           selectively auditing an access to the relational database,  
7                        wherein selectively auditing the access involves  
8                        automatically modifying the query prior to processing the query, so  
9                        that processing the query causes an audit record to be created and  
10                      recorded only for rows in relational tables that are accessed by the  
11                      query and that satisfy an auditing condition,  
12                      wherein satisfying the auditing condition allows selective  
13                      auditing of the query and not for other rows,  
14                      wherein the auditing condition specifies a condition based on  
15                      a value of a field in a row in the relational database, and  
16                      wherein satisfying the auditing condition allows selective  
17                      auditing of the query,  
18                      wherein if the query includes a select statement, inserting a  
19                      case statement into the select statement that calls a function that  
20                      causes the audit record to be created and recorded if the auditing

21 condition is satisfied,  
22 wherein inserting the case statement into the query further  
23 comprises:  
24 inserting the case statement into the query,  
25 allowing a query processor to allocate buffer  
26 for the query,  
27 removing the case statement from the query,  
28 allowing the query processor to generate a  
29 query plan for the query, and  
30 scheduling the case statement near the end of  
31 the query plan to ensure that the case statement is  
32 evaluated only after other conditions of the query are  
33 satisfied, so that the auditing record is created only  
34 for rows that are actually accessed by the query;  
35 processing the modified query to produce a query result, wherein processing  
36 the modified query includes:  
37 creating the auditing records for rows in relational tables that  
38 are accessed by the query and that satisfy the auditing condition, and  
39 recording the audit record in an audit record store; and  
40 returning the query result.

1 10 (Canceled).

1 11. (Previously presented) The computer-readable storage medium of claim  
2 9, wherein the method further comprises ensuring that the case statement is  
3 evaluated near the end of the query processing to that the case statement is  
4 evaluated only after other conditions of the query are satisfied.

1           12. (Original) The computer-readable storage medium of claim 9, wherein  
2     the method further comprises retrieving the auditing condition for a given table  
3     from a data structure associated with the given table.

1           13. (Original) The computer-readable storage medium of claim 9, wherein if  
2     the query modifies at least one entry in the relational database, the method further  
3     comprises using a relational database system trigger to create and record the audit  
4     record for the modification to the relational database.

1           14 (Canceled).

1           15. (Original) The computer-readable storage medium of claim 9, wherein  
2     the audit record includes:  
3           a user name for a user making the query;  
4           a time stamp specifying a time of the query; and  
5           a text of the query.

1           16. (Original) The computer-readable storage medium of claim 9, wherein  
2     the auditing condition includes a condition for a field within the relational database.

1           17. (Previously presented) An apparatus that selectively audits accesses to a  
2     relational database, comprising:  
3           a receiving mechanism configured to receive a query for the relational  
4     database;  
5           a selective auditing mechanism configured to selectively audit an access to  
6     the relational database,  
7                         wherein selectively auditing the access involves  
8                         automatically modifying the query prior to processing the query, so  
9                         that processing the query causes an audit record to be created and  
10                        recorded only for rows in relational tables that are accessed by the

11 query and that satisfy an auditing condition,  
12 wherein satisfying the auditing condition allows selective  
13 auditing of the query and not for other rows,  
14 wherein the auditing condition specifies a condition based on  
15 a value of a field in a row in the relational database, and  
16 wherein satisfying the auditing condition allows selective  
17 auditing of the query,  
18 wherein if the query includes a select statement, inserting a  
19 case statement into the select statement that calls a function that  
20 causes the audit record to be created and recorded if the auditing  
21 condition is satisfied,  
22 wherein inserting the case statement into the query further  
23 comprises:  
24 inserting the case statement into the query,  
25 allowing a query processor to allocate buffer  
26 for the query,  
27 removing the case statement from the query,  
28 allowing the query processor to generate a  
29 query plan for the query,  
30 and scheduling the case statement near the  
31 end of the query plan to ensure that the case statement  
32 is evaluated only after other conditions of the query  
33 are satisfied, so that the auditing record is created  
34 only for rows that are actually accessed by the query;  
35 a query processor that is configured to process the modified query to  
36 produce a query result, wherein processing the modified query includes:  
37 creating the auditing records for rows in relational tables that  
38 are accessed by the query and that satisfy the auditing condition, and  
39 recording the audit record in an audit record store; and  
40 a returning mechanism that is configured to return the query result.

1           18 (Canceled).

1           19. (Previously presented) The apparatus of claim 17, wherein the query  
2   modification mechanism is configured to ensure that the case statement is evaluated  
3   near the end of the query processing so that the case statement is evaluated only  
4   after other conditions of the query are satisfied.

1           20. (Original) The apparatus of claim 17, wherein the query modification  
2   mechanism is configured to retrieve the auditing condition for a given table from a  
3   data structure associated with the given table.

1           21. (Original) The apparatus of claim 17, wherein if the query modifies at  
2   least one entry in the relational database, the apparatus uses a relational database  
3   system trigger to create and record the audit record for the modification to the  
4   relational database.

1           22 (Canceled).

1           23. (Original) The apparatus of claim 17, wherein the audit record includes:  
2   a user name for a user making the query;  
3   a time stamp specifying a time of the query; and  
4   a text of the query.

1           24. (Original) The apparatus of claim 17, wherein the auditing condition  
2   includes a condition for a field within the relational database.

1           25. (Previously presented) The method of claim 1, further comprising  
2   retrieving the auditing condition for a given table from a data structure associated  
3   with the given table.

1           26. (Currently amended) A method for selectively auditing accesses to a  
2 relational database, comprising:  
3           receiving a database operation for the relational database;  
4           selectively auditing an access to the relational database based on an  
5 auditing condition, wherein the auditing condition specifies a condition based on a  
6 value of a field in a row in the relational database;  
7           processing the database operation to produce a database operation result,  
8 wherein processing the database operation includes:  
9                       creating the auditing records for selected rows in the  
10                      relational database that are accessed by the database operation,  
11                      wherein the selected rows satisfy the auditing condition, and  
12                      recording the audit record in an audit record store; and  
13           returning the database operation result;  
14           wherein selectively auditing the access involves automatically modifying  
15 the database operation prior to processing the database operation;  
16           wherein processing the database operation causes an audit record to be  
17 created and recorded only for rows in relational tables that are accessed by the  
18 database operation and that satisfy an auditing condition;  
19           wherein satisfying the auditing condition allows selective auditing of the  
20 database operation and not for other rows;  
21           wherein satisfying the auditing condition allows selective auditing of the  
22 database operation;  
23           wherein if the database operation includes a select statement, inserting a  
24 case statement into the select statement that calls a function that causes the audit  
25 record to be created and recorded if the auditing condition is satisfied; and  
26           wherein if inserting the case statement into the database operation further  
27 comprises inserting the case statement into the database operation;



28                    allowing a database operation processor to allocate buffer  
29                    for the database operation,  
30                    removing the case statement from the database operation,  
31                    allowing the database operation processor to generate a  
32                    database operation plan for the database operation, and  
33                    scheduling the case statement near the end of the database  
34                    operation plan to ensure that the case statement is evaluated only  
35                    after other conditions of the database operation are satisfied, so that  
36                    the auditing record is created only for rows that are actually  
37                    accessed by the database operation.

1                    27 (Canceled).

1                    28. (Currently amended) The method of claim 26~~claim 27~~, wherein the  
2                    auditing condition includes a condition for at least two fields within the relational  
3                    database.

1                    29. (Currently amended) A computer-readable storage medium storing  
2                    instructions that when executed by a computer cause the computer to perform a  
3                    method for selectively auditing accesses to a relational database, the method  
4                    comprising:  
5                           receiving a database operation for the relational database;  
6                           selectively auditing an access to the relational database based on an  
7                    auditing condition, wherein the auditing condition specifies a condition based on a  
8                    value of a field in a row in the relational database;  
9                           processing the database operation to produce a database operation result,  
10                    wherein processing the database operation includes:  
11                           creating the auditing records for selected rows in the

12 relational database that are accessed by the database operation,  
13 wherein the selected rows satisfy the auditing condition, and  
14 recording the audit record in an audit record store; and  
15 returning the database operation result;  
16 wherein selectively auditing the access involves automatically modifying  
17 the database operation prior to processing the database operation;  
18 wherein processing the database operation causes an audit record to be  
19 created and recorded only for rows in relational tables that are accessed by the  
20 database operation and that satisfy an auditing condition;  
21 wherein satisfying the auditing condition allows selective auditing of the  
22 database operation and not for other rows;  
23 wherein satisfying the auditing condition allows selective auditing of the  
24 database operation;  
25 wherein if the database operation includes a select statement, inserting a  
26 case statement into the select statement that calls a function that causes the audit  
27 record to be created and recorded if the auditing condition is satisfied; and  
28 wherein if inserting the case statement into the database operation further  
29 comprises inserting the case statement into the database operation:  
30 allowing a database operation processor to allocate buffer  
31 for the database operation,  
32 removing the case statement from the database operation,  
33 allowing the database operation processor to generate a  
34 database operation plan for the database operation, and  
35 scheduling the case statement near the end of the database  
36 operation plan to ensure that the case statement is evaluated only  
37 after other conditions of the database operation are satisfied, so that  
38 the auditing record is created only for rows that are actually  
39 accessed by the database operation.

1           30 (Canceled).

1           31. (Currently amended) The computer-readable storage medium of claim  
2 29-claim 30, wherein the auditing condition includes a condition for at least two  
3 fields within the relational database.

1           32. (Currently amended) An apparatus for selectively auditing accesses to  
2 a relational database, comprising:  
3           a receiving mechanism configured to receive a database operation for the  
4 relational database;  
5           a selective auditing mechanism configured to selectively audit an access to  
6 the relational database based on an auditing condition, wherein the auditing  
7 condition specifies a condition based on a value of a field in a row in the relational  
8 database;  
9           a processing mechanism configured to process the database operation to  
10 produce a database operation result;  
11           a creating mechanism configured to create the auditing records for  
12 selected rows in the relational database that are accessed by the database  
13 operation, wherein the selected rows satisfy the auditing condition, and  
14           a recording mechanism configured to record the audit record in an audit  
15 record store; and  
16           a returning mechanism configured to return the database operation result;  
17           wherein selectively auditing the access involves automatically modifying  
18 the database operation prior to processing the database operation;  
19           wherein processing the database operation causes an audit record to be  
20 created and recorded only for rows in relational tables that are accessed by the  
21 database operation and that satisfy an auditing condition;

22        wherein satisfying the auditing condition allows selective auditing of the  
23        database operation and not for other rows;  
24        wherein satisfying the auditing condition allows selective auditing of the  
25        database operation;  
26        wherein if the database operation includes a select statement, inserting a  
27        case statement into the select statement that calls a function that causes the audit  
28        record to be created and recorded if the auditing condition is satisfied; and  
29        wherein if inserting the case statement into the database operation further  
30        comprises inserting the case statement into the database operation:  
31                allowing a database operation processor to allocate buffer  
32                for the database operation,  
33                removing the case statement from the database operation,  
34                allowing the database operation processor to generate a  
35                database operation plan for the database operation, and  
36                scheduling the case statement near the end of the database  
37                operation plan to ensure that the case statement is evaluated only  
38                after other conditions of the database operation are satisfied, so that  
39                the auditing record is created only for rows that are actually  
40                accessed by the database operation.

1        33 (Canceled).

1        34. (Currently amended) The apparatus of claim 32 ~~claim 33~~, wherein the  
2        auditing condition includes a condition for at least two fields within the relational  
3        database.